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RONALD MAXWELL MAY
ASSISTANT COMMISSIONER OF PATENTS

ORIGINAL

APPLICANT: Peter Samuel Vogel

A U S T R A L I A

PATENTS ACT 1952

PROVISIONAL SPECIFICATION FOR THE INVENTION ENTITLED:

Automatic Censorship Of TV Programmes

This invention is described in the following Statement:

5805/3

The present invention relates to methods of, and apparatus for, automatic censorship of video programmes. The term video programme used hereinafter refers to broadcast television programmes, video tapes, cable television, and other forms of video distribution. The term also encompasses the accompanying audio or sound track if any.

The need for censorship of video material is generally accepted by most societies, for the purposes of preventing the viewing of material by persons other than the target audience. Usually, such censorship takes the form of limiting access of a certain group of people, for example children, to a certain class of material, for example pornographic or violent movies. Other uses of censorship include the prevention of confidential material from being viewed by unauthorised persons, for example a company may produce a corporate video containing sensitive financial data which it does not want to be viewed by unauthorised employees.

Traditionally, such censorship has been accomplished by classifying material according to certain guidelines, and then using legal or other disciplinary means for preventing viewing of material by those unqualified or unauthorised for such viewing. In the case of pornographic videos, for example, these may be given an "X" classificiation, and children can be to some degree inhibited from viewing such materials by withholding supply. In the corporate example cited

above, the video can be labelled "confidential", and only persons with suitable permission can be given access.

All prior-art censorship means suffer from a number of serious shortcomings. The main difficulty is that the enforcement means are not adequate to ensure effective restriction of access to unqualified persons, primarily due to reliance on legal means, honesty, self-discipline and other unreliable societal attributes. A further difficulty is that there exists a range of censorship classifications intended not as total prohibitions, but more as recommendations to the viewer, for example it may be desirable to classify a programme containing explicit sexual scenes in such a way as to warn potential viewers that if they are sensitive to such scenes then it is recommended that they not view that material. In this case it is not intended that access be denied any group of people.

Furthermore, due to the subjective nature of much censorship, there is a wide diversity of views within society as to what materials should be censored, if any, and as social standards change, censorship rules and standards change. Materials which were at one time in history restricted, or indeed destroyed, as a result of censorship, may today be quite acceptable to the community at large. Prior art censorship means are lacking in the ability to rapidly change the classification of materials if required.

It is an object of the present invention to provide an improved censorship means and method capable

of more effectively preventing the viewing of censored video material by unauthorised persons or persons who do not wish to be subjected to certain classes of programme. A further object of the present invention is to permit flexible and rapid change of classification and classes of persons to whom those classifications of video material are to be viewable.

Another limitation of prior art censorship means is that in the case of television or other video distribution means, it is possible and indeed usual to intermix many different classifications of material within a given viewing segment. For example, during an hour of television viewing, one may be exposed to cartoons, news, advertisements and drama. The correct classification of material for accurate censorship purposes therefore changes from moment to moment, and even if suitable warnings were displayed at the beginning of each change of classification, it would be impractical for the viewer to switch reception on and off appropriately.

It is a further object to provide automatic access control should the viewer so desire, that is, having selected which classes of material he/she wishes to view, the present invention will enable suppression of materials falling outside these classes.

According to a first aspect of the present invention there is disclosed an automatic censorship method comprising the steps of encoding censorship classification data into a video programme, detecting

said data at the point of reception or viewing of said video programme, and automatically disabling or enabling display or recording of said programme according to classifications deemed to be permitted at the point of reception.

Apparatus for automatically censoring video programmes is also disclosed, comprising a censorship classification encoder which inserts classification data into a video programme, a classification detector which detects said classification data at the point of reception or viewing of said video programme, and a controller equipped to automatically disable or enable display or recording of said programme according to classifications deemed to be permitted at the point of reception.

Encoding of censorship classifications can be achieved by a number of suitable known techniques of embedding control data in either the video or audio component of the video programme. One suitable technique is to encode a digital word into the form of black and white transitions during a line of picture occurring within the vertical blanking interval. By choosing a line which is not visible on the normal television picture, the digital data can be conveyed without any visible interference. The digital word can be readily recovered from the video signal by decoding means well known to the video art. Such encoding is commonly used for conveyance of test signals and text data used for public information systems such as "Teletext". The

encoder can be equipped with a keyboard by means of which an operator enters a classification code which is translated by the encoder into a unique digital word. This word is then formatted to conform to the requirements of a standard video signal, and is inserted by the encoder or other means into the prescribed line of the video field. This encoding process can take place at the time of preparation of the video programme, when dubbing a video tape prior to distribution, at the time of transmission, or at any convenient point prior to viewing or recording by the final recipient.

Alternatively, classification data can be encoded into the audio component of the video programme, although most known encoding schemes would have the undesired effect of producing audible interference.

The video programme, having reached its destination by means of radio broadcast, cable distribution, physical transportation of a video recording, or other dissemination means, therefore contains within it the classification code relevant to the nature of the programme at that moment. The code can be transmitted repeatedly, so that should a tape be played or reception commenced from some point other than the beginning of a programme, the correct classification can be rapidly established.

Detection of the classification data can be accomplished by suitable decoding means within the video programme viewing or recording equipment, for example by extracting the appropriate line from the received and

demodulated video signal and reconstructing the digital word representing the classification by detecting the relevant black/white transitions. The classification data word can then be compared by the controller to a preselected range of permissable classifications. The result of the comparison causes switching means to enable or disable viewing or reception of the video programme as appropriate.

Alternatively, classification decoding and controlling can be implemented by a suitable device external to the viewing or recoding equipment. In this case, the decoder receives the video programme via the same source as the viewing or recording equipment, and the controller generates control signals suitable for enabling or disabling said equipment as dictated by the classification current.

Operation of the present invention as disclosed above requires the involvement of the producers or disseminators of the video programme, as it is necessary to have access to the programme at some stage to encode the classification data. It is possible that in some cases the appropriate parties will be unable or unwilling to so encode programmes, in which case an alternative method of conveying censorship classification data to the viewing or recording point is required. Such means and method will now be disclosed.

According to a second aspect of the present invention there is disclosed an automatic censorship method comprising the steps of encoding censorship

classification data relating to a video programme into a
digital signal, transmitting said data to the point of
reception or viewing of said video programme, and
automatically disabling or enabling display or recording
of said programme according to classifications deemed to
be permitted at the point of reception.

Apparatus for automatically censoring video
programmes is also disclosed, comprising a censorship
classification encoder which translates a given
censorship classification relating to a video programme
into unique classification data, transmission means for
conveying said data to the point of reception or viewing
of said video programme, a classification detector which
detects said classification data at the point of
reception or viewing of said video programme, and a
controller equipped to automatically disable or enable
display or recording of said programme according to
classifications deemed to be permitted at the point of
reception.

Whereas according to the first aspect of the
present invention, the censorship classification data is
embedded within and conveyed with the video programme,
according to this aspect said data originates from a
source distinct from the source of the video programme.
This aspect of the invention is only applicable in cases
where the video programme is being disseminated in
realtime, that is by means of radio, cable or similar
means, rather than distribution of video tapes. Encoding
of censorship classifications also take place in

realtime, that is, as a programme is disseminated, an operator selects the appropriate classification by viewing the programme and, for example, hitting one of a selection of buttons. This operator, who in fact performs the function of realtime censor, is typically located at a site remote from the point of origin of the programme being censored. Classification data is immediately conveyed to the point of reception or recording of the programme by means of radio transmission, cable, or other dissemination means. Once received, the classification detector and censorship controller operate in a similar manner to that disclosed by the first aspect of the present invention.

Some embodiments of the present invention will now be described with refernce to the drawings in which:

Fig. 1 is a schematic block diagram of the preferred embodiment according to the first aspect of the present invention, representing the case where censorship classification takes place at the point of origin of the video programme prior to the programme being transmitted electronically.

Fig. 2 is a schematic block diagram of the preferred embodiment according to the first aspect of the present invention, representing the case where censorship classification takes place at the point of origin of the video programme prior to the programme being disseminated by distribution of video recordings

Fig. 3 is a schematic block diagram of the preferred embodiment according to the second aspect of

the present invention, representing the case where censorship classification takes place at a location distinct from the point of origin of the video programme.

As seen in Fig. 1, video source 1 is a videotape recorder, television camera, television studio or other source of video programme. Classification encoder 2 is an encoder comprising a keyboard by means of which a censorship classification can be entered by the operator, encoding means which translates the entered classification into a unique digital word, and video line insertion means which embeds said word into a given line of each video field of the video programme emanating from video source 1. The video programme, now classified, is ready for transmission via radio or recording on video tape for later transmission. For convenience, classifications can be entered into classification encoder 2 in the form of classes, sub-classes, sub-sub-classes and so on. For example, programmes can be classified as follows:

<u>Class</u>

Entertainment

> <u>Sub-class</u>
>
> Suitable for children
>
> > <u>Sub-sub-class</u>
> >
> > Preschool
> >
> > Primary school
> >
> > Teenage
>
> <u>Sub-class</u>
>
> Parental guidance recommended
>
> Adult only
>
> > <u>Sub-sub-class</u>
> >
> > Sexually explicit
> >
> > Violent

<u>Class</u>

Advertisement

> <u>Sub-class</u>
>
> Products
>
> > <u>Sub-sub-class</u>
> >
> > Sanitary products
> >
> > Contraceptives
> >
> > Alcoholic beverages
>
> <u>Sub-class</u>
>
> Services
>
> > <u>Sub-sub-class</u>
> >
> > Financial
> >
> > Home maintenance
> >
> > Professional advice

Any combination of these can be encoded into the classification digital word.

At some time after encoding of the classification, the programme is transmitted to the viewing or recording point via transmission means 3 which is typically transmission via television stations or broadcast via cable connection.

At the point of viewing or recording, classification detector 6 receives the video programme via reception means capable of being tuned to the same channel as that being received for viewing or recording. The digital classification word is extracted each field from the vertical interval by classification detector 6, using techniques well known to the video art. Censorship controller 7 receives the extracted classification word, and compares it with a range of classifications previously entered by the operator using user interface 8. If the current classification matches one of those selected to be censored by the operator, censor output 9 becomes activated. Censor output 9 activates control input 10 of the video tape recorder and/or control input 11 of the television receiver, causing certain automatic censorship actions to happen. The desired actions are selected by the operator and can include the following examples:

a) Inhibit reception of both sound and picture
   Example: television only receives programmes suitable for children

b) Mute sound but continue displaying picture

Example: remove sound during advertisements

c) Blank picture but continue sound

Example: Remove visual content from news programmes

d) Switch to alternative programme

Example: Replace advertisements with soothing images of tropical fish, news and information items from Teletext or other source, or alternative advertisements from another source

e) Pause recording of programme onto videotape

Example: Remove advertisements from recorded movies

f) Enable record of programme onto videotape

Example: Record all advertisements for motor vehicles

In some cases it is not desirable to allow the operator discretion as to which classifications are to be censored, for example if parents wish to regulate their children's television viewing. In this case the user interface can be equipped to be accessible only to authorised personnel, for example those knowing a secret code number which must be entered before censorship selections can be made.

Referring now to Fig. 2, there is illustrated a schematic block diagram of the preferred embodiment suitable for use in automatically censoring video programmes distributed by video tape. As seen in Fig. 2, video source 1 is the source of the video programme to be censored. The classification code is embedded in the video programme by classification encoder 2 in the same fashion as described for the embodiment of Fig. 1 above,

except that whereas in that case the classified programme is ultimately transmitted by radio signal or cable, in this case the programme is distributed in the form of a video recording, such as magnetic tape or optical disk. Said recordings are produced in the usual way except that the programme is classified before being fed to video recording production means 3.

When the operator desires to view the programme, the disk or tape is played by disk/tape player 4, the output of which presents a video signal to both the video display 5 and classification detector 6. Classification detector 6 and censorship controller 7 operate as described in the preferred embodiment of Fig 1, except that the censor output 9 is used to inhibit operation of the video tape recorder via control input 10, with the result that it is not possible to play a videotape unless the censorship classification of the programme thereon coincides with one of those previously entered via user interface 8. A typical application of this embodiment is to allow parents to view videotapes classified as pornographic after a secret code has been entered via user interface 8, while ensuring that the same tape will not be playable by the children of the house to whom the code is not known.

Another useful application is to allow access to sensitive corporate or military information only to those with a certain security clearance. This is achieved by classifying videotapes as "secret" and ensuring that only qualified personnel know the corresponding "secret"

classification code.

Referring now to Fig. 3, there is illustrated a schematic block diagram of the preferred embodiment according to the second aspect of the present invention, representing the case where censorship classification takes place at a location distinct from the point of origin of the video programme.

As seen in Fig. 3, video source 1 is a videotape player, television camera, television studio or other source of video programme. Classification encoder 2 is an encoder comprising a keyboard by means of which a censorship classification can be entered by the operator and encoding means which translates the entered classification into a unique censorship classification signal. Whereas in the preferred embodiment of Fig. 1 said censorship classification signal is embedded in the video programme at the source of transmission, in the preferred embodiment of Fig. 3 the video programme is transmitted to the point of viewing or recording via transmission means 3, while the censorship classification signal is transmitted to the same destination from a separate location and via a separate radio signal, cable or other means, shown in Fig. 3 as classification transmission means 12.

Once received at the point of viewing or recording, the censorship classification signal is processed by classification detector 6 in the manner described for the preferred embodiment of Fig. 1. Selection of options using user interface 8, the actions

of censorship controller 7, and the resulting automatic censorship actions are also as described above for the preferred embodiment of Fig. 1.

This embodiment of the present invention has the advantage over the embodiment of Fig. 1 that it is not necessary for television broadcasts to be encoded with censorship classification for the user of the present invention to benefit from automatic censorship. It does however have a slight disadvantage in that the classification of programmes must be performed as programmes go to air, which means in practice one or more persons must constantly monitor television broadcasts and select appropriate classifications from moment to moment, a process which suffers from a slight delay due to human reaction time, and the risk of human error. These are however not significant difficulties, since reaction time can be typically less than one second, and the risk of error is small compared with prior art means of censorship.

As will be apparent to those skilled in the art, the present invention can be implemented using suitable electronic hardware, or using programmable devices such as microprocessors equipped with suitable software.

The foregoing describes only some embodiments of the present invention and modifications, obvious to those skilled in the art, can be made without departing from the scope of the present invention. For example, while the classification detector and censorship controller are desribed in these embodiments as being distinct from the

television reception or recording equipment, this apparatus can be incorporated within other equipment such as a television receiver, monitor, or video tape recorder. Another example of simplification of the present invention involves reduction of the detail with which censorship classifications can be specified, with resultant reduction of complexity of encoding, decoding and user interface means. For example, in cases where the present invention is to be used only as a means of eliminating advertisemnets from programmes, the encoding means need comprise only one switch, the classification signal needs only convey two logical states, and the user interface at the point of viewing or recording need only comprise a single switch, labelled, for example "ADVERTISEMENTS ON/OFF". In the simplest case the present invention need have no user interface, being preset in its censorship function.

For the purpose of implementing the present invention without needing to modify the videotape recorder and/or television receiver, control inputs 10 and 11 of the drawings can be the remote control interface of the videotape recorder and/or television receiver where in cases where these are equipped with rmote control. That is, the censorship controller 7 is equipped with interface means compatible with the remote control communication standard, for example an infra-red transmitter, so that pausing, muting, blanking, channel-changing, or other censorship actions can be effected using unmodified recording/receiving equipment.

In cases where great flexibility of user interface is required a video display device can be used to display the range of available censorship categories in the form of a menu, and the operator can make selections from that menu using a small number of switches, according to techniques well known to the computer art.

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PETER SAMUEL VOGEL

Patent Attorneys for the Applicant
SPRUSON & FERGUSON